START

ENGINEERING CHANGE NOTICE

Page 1 of 2

1. ECN 198924

Proj. ECN

2. ECN Category (mark one)	3. Originator's Name, Organization, MSIN, and Telephone No.		4. Date
Supplemental [] Direct Revision [X] Change ECN [] Temporary [] Standby [] Supersedure [] Cancel/Void []	A. K. McDowell, Tank Farms Environmental Eng., R1-51, 373-5619		12/30/93
	5. Project Title/No./Work Order No. N/A	6. Bldg./Sys./Fac. No. LERF	7. Impact Level 4
	8. Document Numbers Changed by this ECN (includes sheet no. and rev.) WHC-SD-WM-IP-005, Rev.0	9. Related ECN No(s). N/A	10. Related PO No. N/A

11a. Modification Work	11b. Work Package No.	11c. Modification Work Complete	11d. Restored to Original Condition (Temp. or Standby ECN only)
[] Yes (fill out Blk. 11b) [X] No (NA Blks. 11b, 11c, 11d)	N/A	N/A Cog. Engineer Signature & Date	N/A Cog. Engineer Signature & Date

12. Description of Change

Direct page change revision to incorporate DOE-RL comments into LERF Inspection Schedule.

MAY 1994 RECEIVED EPIC

13a. Justification (mark one)							
As-Found	[X]	Criteria Change	[]	Design Improvement	[]	Environmental	[]
		Facilitate Const.	[]	Const. Error/Omission	[]	Design Error/Omission	[]

13b. Justification Details

DOE-RL comments being incorporated into document.

14. Distribution (include name, MSIN, and no. of copies)

See Distribution Sheet

RELEASE STAMP

OFFICIAL RELEASE BY WHC

DATE JAN 04 1994

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A-7900-013-2 (06/92) GEF095

A-7900-013-1 (06/92)

9413275.2129

ENGINEERING CHANGE NOTICE

1. ECN (use no. from pg. 1): 198924

15. Design Verification Required	16. Cost Impact				17. Schedule Impact (days)	
	ENGINEERING		CONSTRUCTION			
[] Yes	Additional	[] $	Additional	[] $	Improvement	[]
[X] No	Savings	[] $	Savings	[] $	Delay	[]

18. Change Impact Review: Indicate the related documents (other than the engineering documents identified on Side 1) that will be affected by the change described in Block 12. Enter the affected document number in Block 19.

SDD/DD	[]	Seismic/Stress Analysis	[]	Tank Calibration Manual	[]
Functional Design Criteria	[]	Stress/Design Report	[]	Health Physics Procedure	[]
Operating Specification	[]	Interface Control Drawing	[]	Spares Multiple Unit Listing	[]
Criticality Specification	[]	Calibration Procedure	[]	Test Procedures/Specification	[]
Conceptual Design Report	[]	Installation Procedure	[]	Component Index	[]
Equipment Spec.	[]	Maintenance Procedure	[]	ASME Coded Item	[]
Const. Spec.	[]	Engineering Procedure	[]	Human Factor Consideration	[]
Procurement Spec.	[]	Operating Instruction	[]	Computer Software	[]
Vendor Information	[]	Operating Procedure	[]	Electric Circuit Schedule	[]
OM Manual	[]	Operational Safety Requirement	[]	ICRS Procedure	[]
FSAR/SAR	[]	IEFD Drawing	[]	Process Control Manual/Plan	[]
Safety Equipment List	[]	Cell Arrangement Drawing	[]	Process Flow Chart	[]
Radiation Work Permit	[]	Essential Material Specification	[]	Purchase Requisition	[]
Environmental Impact Statement	[]	Fac. Proc. Samp. Schedule	[]		[]
Environmental Report	[]	Inspection Plan	[]		[]
Environmental Permit	[]	Inventory Adjustment Request	[]		[]

19. Other Affected Documents: (NOTE: Documents listed below will not be revised by this ECN.) Signatures below indicate that the signing organization has been notified of other affected documents listed below.

Document Number/Revision	Document Number/Revision	Document Number Revision

20. Approvals

Signature	Date	Signature	Date
OPERATIONS AND ENGINEERING		ARCHITECT-ENGINEER	
Cog Engineer A.T. McDowell	1/4/94	PE	
Cog. Mgr. R.D. Gustafson	1/4/94	QA	
QA		Safety	
Safety		Design	
Security		Environ.	
Environ.		Other	
Projects/Programs			
Tank Waste Remediation System			
Facilities Operations		DEPARTMENT OF ENERGY	
Restoration & Remediation		Signature or Letter No.	
Operations & Support Services			
IRM		ADDITIONAL	
Other			

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Date Received: 12/30/93	**INFORMATION RELEASE REQUEST**	Reference: WHC-CM-3-4

Complete for all Types of Release

Purpose

[]	Speech or Presentation		[]	Reference
	[] Full Paper	(Check only one suffix)	[]	Technical Report
	[] Summary		[]	Thesis or Dissertation
	[] Abstract		[]	Manual
	[] Visual Aid		[]	Brochure/Flier
[]	Speakers Bureau		[]	Software/Database
[]	Poster Session		[]	Controlled Document
[]	Videotape		[X]	Other

ID Number (include revision, volume, etc.): WHC-SD-WM-IP-005, Rev. 0-A

List attachments.

Date Release Required: 1/5/94

Title: LERF Inspection Schedule

Unclassified Category: UC-

Impact Level: 3E SQ

New or novel (patentable) subject matter? [X] No [] Yes
If "Yes", has disclosure been submitted by WHC or other company?
[] No [] Yes Disclosure No(s).

Information received from others in confidence, such as proprietary data, trade secrets, and/or inventions?
[X] No [] Yes (Identify)

Copyrights? [X] No [] Yes
If "Yes", has written permission been granted?
[] No [] Yes (Attach Permission)

Trademarks?
[X] No [] Yes (Identify)

Complete for Speech or Presentation

Title of Conference or Meeting	Group or Society Sponsoring
N/A	N/A

Date(s) of Conference or Meeting	City/State	Will proceedings be published?	Will material be handed out?
N/A	N/A	[] Yes [] No	[] Yes [] No

Title of Journal: N/A

CHECKLIST FOR SIGNATORIES

Review Required per WHC-CM-3-4	Yes	No	Reviewer - Signature Indicates Approval: Name (printed) / Signature / Date
Classification/Unclassified Controlled Nuclear Information	[]	[X]	
Patent - General Counsel	[]	[X]	Per OGC Memo 2/4/93
Legal - General Counsel	[]	[X]	Per OGC Memo 2/4/93
Applied Technology/Export Controlled Information or International Program	[]	[X]	
WHC Program/Project	[X]	[]	R.D. Gustavson R.D. Gustavson 1/3/94
Communications	[]	[X]	
RL Program/Project	[]	[X]	
Publication Services	[]	[X]	
Other Program/Project	[]	[X]	

Information conforms to all applicable requirements. The above information is certified to be correct.

	Yes	No
References Available to Intended Audience	[X]	[]
Transmit to DOE-HQ/Office of Scientific and Technical Information	[]	[X]

Author/Requestor (Printed/Signature) / Date: A. K. McDowell A.K. McDowell 12/30/93

Intended Audience: [] Internal [] Sponsor [X] External

Responsible Manager (Printed/Signature) / Date: R. D. Gustavson R.D. Gustavson 12/30/93

INFORMATION RELEASE ADMINISTRATION APPROVAL STAMP

Stamp is required before release. Release is contingent upon resolution of mandatory comments.

APPROVED FOR RELEASE OFFICIAL DOCUMENT 1/4/94

Date Cancelled	Date Disapproved

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SUPPORTING DOCUMENT

1. Total Pages 122

2. Title	3. Number	4. Rev No.
LERF Inspection Schedule	WHC-SD-WM-IP-005	0-A

5. Key Words

LERF, RCRA Inspection Schedule, 40 CFR 265.15, WAC 173-303-320

APPROVED FOR PUBLIC RELEASE

KMB 1/4/94

6. Author

Name: T. W. Seifert

Signature

Organization/Charge Code 7C420/N136I

7. Abstract

This document specifies the general facility and unit-specific system, equipment, and structural inspections required to be performed at LERF with the RCRA and WAC requirements governing such inspections. The inspection schedules outline procedures used in maintaining compliance with the regulatory requirements and WHC company policy for inspection of the LERF to prevent equipment malfunction and deterioration, operating error, and discharge that may present a threat to human health, or lead to the release of dangerous waste constituents to the environment.

8. PURPOSE AND USE OF DOCUMENT - This document was prepared for use within the U.S. Department of Energy and its contractors. It is to be used only to perform, direct, or integrate work under U.S. Department of Energy contracts. This document is not approved for public release until reviewed.

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9. Impact Level 3ESQ

10. RELEASE STAMP

OFFICIAL RELEASE BY WHC 5

DATE: JAN 04 1994

Sta. 4

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RECORD OF REVISION	(1) Document Number WHC-SD-WM-IP-005	Page 1

(2) Title
LERF Inspection Schedule

CHANGE CONTROL RECORD

(3) Revision	(4) Description of Change - Replace, Add, and Delete Pages	Authorized for Release	
		(5) Cog. Engr.	(6) Cog. Mgr. Date
0	(7) Rev. 0 issued November 30, 1993 by EDT 603085.		
0-A RS	Replaced pages v, 5-5, 5-6, 7-5, & 7-6 by ECN # 198924	A. K. McDonell	R. D Gustavson 1/3/94

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CONTENTS

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- S Plant laboratory and decontamination waste
- T Plant spent decontamination solutions
- 300 Area laboratory waste
- 300 Area fuels fabrication waste (no longer generated)
- 400 Area laboratory waste
- 100-N dilute phosphate decontamination waste and 100 Area spent fuel storage basin sulfate waste from ion exchange regeneration and sand filter backwashing (no longer generated)
- Single-shell tank (SST) salt well pumping waste.

A detailed description of the waste types stored in the tank farms can be found in the Double-Shell Tank Farms Dangerous Waste Permit Application (DOE-RL 1991a) and the Draft Single Shell Tanks System Closure Corrective Action Work Plan (DOE-RL 1989).

5.3 242-A EVAPORATOR WASTE TRANSFER TO LERF

Process condensate from the 242-A Evaporator is transferred to the LERF using a pump (P-C-100) located in the 242-A Evaporator and approximately 4950 feet (1509 meters) of pipe, consisting of a carrier pipe and an outer containment pipeline. Flow through the pipe is controlled through a downstream valve and averages between 30 and 50 gallons per minute, with a maximum flow of approximately 75 gallons (284 liters) per minute.

The pipeline exits the 242-A Evaporator underground and remains below grade at a minimum depth of 4 feet (1.2 meters) for freeze protection until the pipeline emerges at LERF at the corner of the 242-AL-43 basin.

Waste stored at the LERF consists of a dilute mixed-waste stream containing primarily water, along with volatile substances and entrained nonvolatile substances removed from the waste feed. The volatile substances consist of organic compounds, ammonia, and radionuclides. The nonvolatile substances consist of organic compounds, inorganic salts, and radionuclides.

5.4 WASTE DESIGNATION

The process condensate has been designated a dangerous waste per WAC 173-303-070. The substances (referenced by waste code) are discussed in the LERF Part A and Part B permit applications. The codes listed on the current Part A are:

- F001
- F002
- F003
- F004
- F005
- WT02

The waste was designated through evaluation of both process information and sampling data. Processes were reviewed and compared with the discarded chemical products list and the dangerous waste source list.

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Maintenance of at least 4 feet (1.2 meters) of freeboard is assessed through the use of level instrumentation. The level indicator system consists of two electronic level transmitters, one for basin level and one for leachate level. The basin and leachate level signals are transmitted via UHF/PLC to the 242-A Evaporator Control Room. The leachate level is also displayed on a local level indicator. This method also is used to determine whether fluid is being released from the basin. The level indicator system consists of calibrated height lines painted on the basin covers. These horizontal lines correspond to the point at which the floating cover bends as it lifts front he waste surface. The calibrated lines provide a visual indication of changes in basin waste levels. The level indicators are checked as part of the daily inspection conducted at the LERF.

7.4.1.3 Structural Integrity

The structural integrity of the basin dikes has been certified in writing by an independent, qualified, registered professional engineer (IQRPE). The engineer reviewed the supporting calculations that were performed to determine static and dynamic loads and stresses as well as material testing data, soil compaction testing data, and other quality control measures that were followed during construction of the basins.

Visual inspections of the exterior dike walls and covers are conducted during operation. The basins are inspected weekly and after storms to detect evidence of deterioration or improper operation of overtopping control systems. The purpose of these inspections is to make note of any impacts on the dikes from precipitation events, wind, burrowing mammals, or vegetation, and to implement corrective measures to ensure the structural integrity of the dikes.

7.4.2 Leachate Detection, Collection, and Removal

A leak in the primary liner would release process condensate to the underlying drainage gravel. Released fluid would drain to the leachate collection sump. The leachate collection sump pump is activated automatically when the liquid level in the leachate sump reaches the high level sensor. The pump control sensors maintain the liquid level in a 2 inch range. A totalizer on the leachate return line monitors the leachate flow rate and the total leachate flow.

The leachate pump status is indicated in the 242-A Evaporator Control Room. This signal is transmitted via UHF/PLC and is provided by a contact in the pump motor starter. This pump indicator status is shown as on or off. A pump failure would be detected on the control room monitors or by the LERF inspectors noting that the daily leachate pumping volume had dropped off or by higher that normal sump liquid levels.

The EPA acknowledges that there could be leakage associated with a properly constructed liner (EPA 1989, p. 121). The LERF operators determine the daily leakage rate based on totalizer readings and compare the ALR.

7.4.3 Ancillary Equipment Requirements

WAC 173-303-640 and 40 CFR 265.193 discuss ancillary equipment. These regulations specify that ancillary equipment must be provided with full secondary containment (e.g., a trench, jacket, or double-walled piping) that meet the requirements of paragraphs (b) and (c) of 40 CFR 265.193. The condensate transfer pipeline from the 242-A Evaporator to the LERF is a double contained pipeline, and is inspected continuously through the MCS. All of the LERF transfer piping and fittings that are not directly over a catch basin or basin liner are of pipe-within-a-pipe construction.

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7.4.4.1 Piping

The buried pipeline is "inspected" continuously by an electric leak detection system. Single point leak detection elements are installed along the main pipeline at 1,000-foot (305-meter) intervals. The piping system routinely undergoes ongoing integrity assessments in accordance with WAC 173-303-640(2).

Above-ground piping is visually inspected for signs of leakage and for general structural integrity. During visual inspections, particular attention is paid to valves and fittings for signs of cracking, deformation, and leakage. Additionally, catch basins at each retention basin have a leak detector.

7.4.4 Waste Sampling

There is a procedural process for authorizing Westinghouse Hanford Company (WHC) environmental samples requiring laboratory analysis, that defines the interface activities between the Hanford Analytical Services Management (HASM) project and sample coordinators, and between HASM, field samplers, commercial laboratory contacts, and requesters of sample analyses. Sampling is performed in compliance with WHC-SD-W105-SAR-001, SR 3.1.1.1, as described in Section 7.2 of this document.